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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,935	12/05/2001	Holger Klapproth	41993	4721

7590 09/15/2003
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EXAMINER

FORMAN, BETTY J

ART UNIT

PAPER NUMBER

1634

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,935	KLAPPROTH ET AL.	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 15-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 13 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 07/01.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group II, Claims 11-14 in papers filed 24 July 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Priority

2. Applicant's claim for foreign priority is acknowledged. However, the foreign application filed 01/25/1999 fails to provide adequate support under 35 U.S.C. 112 for claims 11-14 of this application.

Specification

3. The disclosure is objected to because the specification does not contain a Brief Description of the Drawings.

Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

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Appropriate correction is required.

Oath/Declaration

4. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the mailing address of each inventor. A mailing address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing address should include the ZIP Code designation. The mailing address may be provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

It does not identify the foreign application for patent or inventor's certificate on which priority is claimed pursuant to 37 CFR 1.55, and any foreign application having a filing date before that of the application on which priority is claimed, by specifying the application number, country, day, month and year of its filing.

It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either on an application data sheet or supplemental oath or declaration.

Claim Objections

5. Claim 13 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim, See MPEP

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§ 608.01(n). For purposes of examination, Claim 13 is interpreted as depending from Claim 11.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 11-14 are indefinite in Claim 11 because the claim is drawn to the production of a polyfunctional polymer monolayer. However, the claim does not result in production of such a monolayer. Furthermore, the method steps do not recite "polyfunctional" limitations. Therefore, it is unclear whether the method steps achieve the claimed method.

b. Claims 11-14 are indefinite in Claim 11, step a) for the recitation "the surface" because the recitation lacks proper antecedent basis in the claim. It is suggested that Claim 11 be amended to provide proper antecedent basis e.g. step a), line 1, replace "the" with "a".

c. Claims 11-14 are indefinite in Claim 11, step a) for the recitation "suitable for attachment to the surface" because it is unclear whether the recitation is a method step of attachment or whether the recitation merely describes a property of the functional groups. It is suggested that Claim 11 be amended to clarify.

d. Claims 11-14 are indefinite in Claim 11, step b) for the recitation "the obtained polymer chain" because the recitation lacks proper antecedent basis in the claim. It is

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suggested that Claim 11 be amended to provide proper antecedent basis e.g. step a), line 1, replace "the" with "an".

e. Claims 11-14 are indefinite in Claim 11, step b) for the recitation "which allow a coupling reaction of the obtained polymer chain with specific samples" because it is unclear whether the recitation is a method step of coupling or whether the recitation merely describes a property of the functional groups. It is suggested that Claim 11 be amended to clarify.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Prucker et al (Macromolecules, 1998, 31: 602-613).

Regarding Claim 11, Prucker et al disclose a process for production of a polyfunctional polymer monolayer comprising covering a surface with a monolayer of polymerization initiator which comprises one or more functional groups suitable for attachment to the surface (i.e. azo

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with chlorosilane) and initiating and carrying out a polymerization reaction in the presence of monomer carrying functional groups (styrene) (page 603, left column).

Regarding Claim 12, Prucker et al disclose the process wherein the initiator comprises a chlorosilane (page 603, left column).

Regarding Claim 13, Prucker et al disclose the process wherein the initiator comprises an azo group (page 603, left column).

10. Claims 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Prucker et al (Macromolecules, 1998, 31: 592-601).

Regarding Claim 11, Prucker et al disclose a process for production of a polyfunctional polymer monolayer comprising covering a surface with a monolayer of polymerization initiator which comprises one or more functional groups suitable for attachment to the surface (i.e. azo with chlorosilane) and initiating and carrying out a polymerization reaction in the presence of monomer carrying functional groups (styrene) (page 593).

Regarding Claim 12, Prucker et al disclose the process wherein the initiator comprises a chlorosilane (page 593).

Regarding Claim 13, Prucker et al disclose the process wherein the initiator comprises an azo group (page 593).

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11. Claims 11, 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Coté et al (U.S. Patent No. 6,485,703, having priority to provisional application filed, 31 July 1998).

Regarding Claim 11, Coté et al disclose a process for production of a polyfunctional polymer monolayer comprising covering a surface with a monolayer of polymerization initiator which comprises one or more functional groups suitable for attachment to the surface (i.e. 2-2-dimethoxy-2-phenyl-acetophenone) and initiating and carrying out a polymerization reaction in the presence of monomer carrying functional groups (ethylene glycol) (Column 6, lines 9-60 and Example 2, Column 40, line 51-66).

Regarding Claim 13, Coté et al disclose the process wherein the initiator comprises a ketone group in conjugation with an aromatic system (i.e. 2-2-dimethoxy-2-phenyl-acetophenone) (Example 2, Column 40, line 51-66).

Regarding Claim 14, Coté et al disclose the process wherein the initiator comprises an aromatic ketone (i.e. 2-2-dimethoxy-2-phenyl-acetophenone) (Example 2, Column 40, line 51-66).

12. Claims 11-13 are rejected under 35 U.S.C. 102(a) as being anticipated by Hawker et al (U.S. Patent No. 6,413,587, filed 2 March 1999).

Regarding Claim 11, Hawker et al disclose a process for production of a polyfunctional polymer monolayer comprising covering a surface with a monolayer of polymerization initiator which comprises one or more functional groups suitable for attachment to the surface and initiating and carrying out a polymerization reaction in the presence of monomer carrying functional groups (Column 10, lines 10-67).

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Regarding Claim 12, Hawker et al disclose the process wherein the initiator comprises a chlorosilane, alkylsilane, disulfide or a thiol (Column 9, lines 1-44).

Regarding Claim 13, Hawker et al disclose the process wherein the initiator comprises an azo group (Claim 15).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coté et al (U.S. Patent No. 6,485,703, having priority to provisional application filed, 31 July 1998) in view of Lennox et al (U.S. Patent No. 6,130,037, filed 24 April 1997).

Regarding Claim 12, Coté et al disclose a process for production of a polyfunctional polymer monolayer comprising covering a surface with a monolayer of polymerization initiator which comprises one or more functional groups suitable for attachment to the surface (i.e. 2,2-dimethoxy-2-phenyl-acetone) and initiating and carrying out a polymerization reaction in the presence of monomer carrying functional groups (ethylene glycol) (Column 6, lines 9-60 and Example 2, Column 40, line 51-66) but they do not teach the initiator comprising a chlorosilane, an alkoxysilane, a disulfide or a thiol group. However, polymer monolayers

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comprising polymerization initiators comprising thiol groups were well known in the art at the time the claimed invention was made as taught by Lennox et al (Column 3, lines 57-67) who further teach that attachment of the monolayer via the thiol functional group provides the desired high-density monolayer (Column 7, lines 1-35). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the monolayer attachment of Coté et al by adding a thiol functional group to their initiator for attaching the monolayer to the substrate for the expected benefit of obtaining a desirable high-density monolayer as taught by Lennox et al (Column 7, lines 1-35).

Prior Art

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Moussey et al (U.S. Patent No. 6,497,729).

Conclusion

16. No claim is allowed.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:30 TO 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this

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application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.



BJ Forman, Ph.D.
Primary Examiner
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September 8, 2003